Representation of functions with ...

so that the length of its arc is given by the function sin θ, valid particularly in the interval 0 - π/2. It is first shown that if a general function F(θ) is chosen instead of the sinusoidal, this function is a positive monotonously increasing function and that the useful domain is at most $F'(\theta_M) = 0$, when $F(\theta_M) = M$ present a maximum; in the case of monotonously decreasing functions the electrical connections can be reversed. It is shown that the voltage collected on the ends of the resistance wire stretched on the cam circumference is proportional to F(θ) and by a series of calculations it is shown that in order to enable a decrease of the voltage when the collector is shifted towards the limiting angle θ_M, the electrical circuit must be improved by using two cams with circumferential resistance wires, in which the one is fed a constant voltage, while the second is fed by the voltage collected on the first, when the voltage collected from the second, proportional to F(θ), is much improved; the two cams are solid and the electrical circuit corresponds to potentiometric multiplication or to potentiometric summation. The possibilities of various cam profiles

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Representation of functions with ...

corresponding to different functions are discussed, and the methods of cam design are illustrated in the case of the function sin θ. There are 22 figures and 6 references: 5 Soviet-bloc and 1 non-Soviet-bloc. The reference to the English-language publication reads as follows: G. Korn and Th. Korn, Electronic Analog Computer, McGraw-Hill, New York, 1952.

Card 3/3

PELECUDI, Chr.

"Automatic machines" by G. A. Saumean. Reviewed by Chr. Pelecudi. Studii cerc mec apl 12 no.4:927-928 '61.

(Saumean, G. A.) (Machinery, Automatic)

16,600

R/016/62/001/012/005/006
I062/I262

AUTHOR: Pelecudi, Chr.

TITLE: Application of translation bend disk with translation pastle for the representation of functions

PERIODICAL: Revue de mecanique appliquee, v.7, no.2, 1962, 297-306

TEXT: The article extends the possibility of using the bend disk for the representation of functions. Schemes for addition and multiplication are described using a resistance stretched around the translation bend disk; in this manner the function F(λ) is determinated by the length of the curve obtained. The study of schemes for integration allows for the extention of such represented functions. Examples are given to show that even the section near the maximum of the function, and the descending branches of the curve can also be used. There are 5 figures.

Card 1/1

PELECUDI, Chr.; BOGDAN, R. C.; CALMACIUC, L.

Stress and deformation of the flexion in the covers of the crankgear mechanisms. Studii cerc mec apl 12 no.5:1047-1056 '61.

PELECUDI, Chr.

Functions represented with the arcs of rotary cams and translation tappets. Studii cerc mec apl 12 no.6:1271-1291 '61.

PEI ECUDI, Chr.

Utilization of the arches of translation cams with translation tappet in the representation of functions. Studii cerc mec apl 13 no.1:51-61 '62.

BOGDAN, R.C.; PELECUDI, Chr.; CALMACIRC, L.

On some spherical curves, and mechanisms necessary for their construction. Studii cerc mec apl 13 no.1:63-77 '62.

PELECUDI, Chr.; BOGDAN, R.C.; CALMACIUC, L.

Motion of a sphere with fixed center for the automatic control of the surface. Studii cerc mec apl 13 no.3:749-759 '62.

PELECUDI, Chr.

"Problems of vectorial calculus" by Marcian Gutmann. Reviewed by Chr. Pelecudi. Studii cerc mec apl 13 no.4:1041 '62.

PELECUDI, Chr.

"Modern probability theory and its applications" by Emanuel Parzen. Reviewed by Chr. Pelecudi. Studii cerc mec apl 13 no.3:818-819 '62.

BOGDAN, R.C., conferentiar; PELECUDI, Chr.; CAIMACIUC, L.; ANTONESCU, Gr.

Studi[redacted] the speed in plane mechanisms, based on the mechano-electronic principles. Studii cerc mec apl 13 no.4:971-987 '62.

1. Membru al Comitetului de redactie, "Studii si cercetari de mecanica aplicata", si Conferentiar la Institutul de petrol, gaze si geologie, Bucuresti (for Bogdan).

PELECUDI, Chr.; BOGDAN, R.C.

Synthesis of cam mechanisms at the prescribing of the values of cam arcs. Studii cerc mec apl 13 no.6:1541-1547 '62.

PELECUDI, Chr.

"Aleatory numbers and systems" by Octav Onicescu. Studii cerc mec apl 13 no.6:1623 '62.

PELECUDI, Chr.

On the mechanisms employed for the automatic control of the surfaces of spherical parts. Rev mec appl 8 no. 4: 541-549 '63.

PELEGUDI, Chr.

Mechanisms used for the automatic control of the surfaces of spherical pieces. Studii cerc mec apl 14 no.2:355-363 '63.

PELECUDI, Chr.

"Theory of mechanisms and engine parts" by D. Tutunaru, Gh. Lazaride, Tr. Demian, Pt. 1. Reviewed by Chr. Pelecudi. Studii cerc mec apl 14 no.5:1221-1223 '63.

PELECUDI, Chr.

Probability considerations on the finding of defects in spherical surfaces. Rev mec appl Roum 9 no.6:1315-1334 '64.

1. Institute of Applied Mechanics of the Rumanian Academy, Bucharest.

PELECUDI, Chr.

"Collection of problems on the theory of mechanisms and machines" by N.I.Manolescu, I.Erceanu, M.Pielmus, P.Antonescu. Reviewed by Chr. Pelecudi. Studii cerc mec apl 16 [i.e. 15] no.3:793-794 '64.

[illegible]

[illegible]amic, [illegible], [illegible] characteristics of the [illegible] [illegible] [illegible] of surfaces of spherical bodies. [illegible] [illegible] [illegible] no. [illegible]

. "Traian [illegible] [illegible] of Applied Mechanics, [illegible] [illegible], Bucharest.

PELECUDI, Chr.

"Reductors and speed variators" by B.Horovitz. Reviewed by Chr.Pelecudi. Studii cerc mec apl 17 no.6:1676-1677 '64.

"Mechanization of motion; kinematics, synthesis, analysis" Lee Harrisberger. Reviewed by Chr.Pelecudi. Ibid.:1677

"Mechanism and machine theory" by N.I.Kolchin, M.S.Movnin. Reviewed by Chr.Pelecudi. Ibid.:1678

PELECUDI, Chr.; HUNKER, T.V.

Analytic study of Assur groups. Studii cerc mec apl 16 [i.e. 15] no.3:657-680 '64.

1. Submitted January 14, 1964.

PELECUDI, Christian

Systematization of graphic analysis of plane simple kinematic chains. Studii cerc mec apl 15 no.2:379-404 '64.

1. Submitted December 2, 1963.

PELECUDI, Christian

Considerations of the probability of finding out the defects of spherical surfaces. Studii cerc mec apl. 15 no.1:105-124 '64.

16.4200

80415
RUM/8-59-1-8/24

AUTHORS: Bogdan, R.C., Pelecudi, Ch.

TITLE: Synthesis of a Four Bar Mechanism on the Basis of Harmonic Analysis

PERIODICAL: Studii si Cercetări de Mecanică Aplicată, 1959, Nr 1, pp 141 - 149 (RUM)

ABSTRACT: The basic problem of the synthesis of mechanism consists in the determination of the geometrical parameters of a mechanism in such a way that a point or an element of it should match some laws of the given motion. The present tendency in the synthesis of mechanism is to satisfy the laws of motion in a maximum finite number of points or the approximation of the respective function with an error as small as possible on a certain effective working position. These problems can be solved analytically by the methods of the Soviet school represented by L.P. Chebyshev [Ref 4], L.V. Assur, I.I. Artobolevskiy [Ref 1], Z.S. Bloch [Ref 3], L.N. Levitskiy [Ref 7], S.A. Cherkudinov and others; or the German school, represented by L. Burmester, H. Alt, R. Beyer [Ref 2], R. Kraus [Ref 6], K.Hain [Ref 5], W. Lichtenfeldt, and others. The authors develop in this article the kinematic parameters of a four bar mechanism, in function of the crank rotation angle φ, using the Fourier series in a complex form. They consider the harmonic analysis as being bery important for the kinematic and dynamic

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characteristics of a mechanism, as did also W. Mayer zur Capellen [Ref 8]. They take into consideration the functions $\Phi = \Phi(\varphi)$, $\Psi = \Psi(\varphi)$, $Z = Z(\varphi)$ and $Z_o = Z_o(\varphi)$ and their derivations as representing the speeds and accelerations for the geometrical parameters of a four-sided mechanism (Figure):

$$e^{i\Phi(\varphi)} = \sum_{-\infty}^{+\infty} A_k e^{ik\varphi}, \quad (1)$$

$$e^{i\Psi(\varphi)} = \sum_{-\infty}^{+\infty} M_k e^{ik\varphi}, \quad (2)$$

$$Z_o(\varphi) = \sum_{-\infty}^{+\infty} N_k e^{ik\varphi}, \quad (3)$$

$$Z(\varphi) = \sum_{-\infty}^{+\infty} P_k e^{ik\varphi}, \quad (4).$$

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The fix axes Oxy have their origin in the center of the basic element AD and the mobile axes $O\xi\eta$ are connected to the rod and have their

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origin in the center of the BC rod. The polygonal contours $OABO_1$ and $ODCO_1$ have thus the vectorial relation:

$\overline{OO_1} = \overline{OA} + \overline{AB} + \overline{BO_1} = \overline{OD} + \overline{DC} + \overline{CO_1}$ and $\overline{OM} = \overline{OO_1} + \overline{O_1M}$.

Using the complex representation of the vectors:

$$Z_o = \frac{l}{2} + re^{i\varphi} + \frac{L}{2} e^{i\psi} = \frac{l}{2} + Re^{i\phi} - \frac{L}{2} e^{i\psi} \qquad (5)$$

and $Z = Z_o + \frac{}{} e^{i\psi}$ (Nr 6), the authors deduce the relation for the identification of the coefficients:

$$\sum_{-\infty}^{+\infty} (B_k e^{ik\varphi} + \bar{B}_k e^{-ik\varphi}) = 2\alpha_1 e^{i\varphi} + 2\alpha_{-1} e^{-i\varphi} + 2\alpha_o$$

$$\sum_{-\infty}^{+\infty} (B_k + \bar{B}_{-k}) e^{ik\varphi} = 2\alpha_1 e^{i\varphi} + 2\alpha_{-1} e^{-i\varphi} + 2\alpha_o \qquad (13)$$

Card 3/7 and thus:

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$$\begin{aligned} B_o + \bar{B}_o &= 2\alpha_o, \\ B_1 + \bar{B}_{-1} &= 2\alpha_1, \\ &\cdots\cdots\cdots\cdots \\ B_k + \bar{B}_{-k} &= 2\alpha_k. \end{aligned} \tag{14}$$

The constants B_k are the complex coefficients of the Fourier series for the function;

$$f(\varphi) = e^{i\phi}(\ell - re^{-i\varphi}) = \sum_{-\infty}^{+\infty} B_k e^{ik\varphi} \tag{15}$$

and its conjugate relation. The conditions (14) are being imposed by the geometry of the four-sided mechanism, by which the function ϕ depends from φ. Another series of relations between the coefficients A_k, respectively B_k can be obtained by taking the products of the relations (10) and (15), thus:

$$\sum_{-\infty}^{+\infty} A_k \bar{A}_k - 1 \quad \sum_{-\infty}^{+\infty} A_k \bar{A}_{k+m} = 0, \quad \text{for } m \neq 0. \tag{17}$$

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$$\sum_{-\infty}^{+\infty} B_k \bar{B}_{k+m} = \beta_m, \quad \beta_o = l^2 + r^2, \quad \beta_1 = \beta_{-1} = -lr, \quad \beta_m = 0, \quad m \neq -1, 0, +1. \tag{18}$$

Performing the transformation: $C_k = B_k - \alpha_k$ (Nr 19), the C_k constants are the complex coefficients of the Fourier series for the function:

$$F(\varphi) = f(\varphi) - \alpha_{-1} e^{-i\varphi} - \alpha_1 e^{i\varphi} - \alpha_o = \sum_{-\infty}^{+\infty} C_k e^{ik\varphi} \tag{20}$$

and its conjugate. From the definition of the $F(\varphi)$ function results that:

$$F(\varphi) = -\bar{F}(\varphi) = \frac{f(\varphi) - \bar{f}(\varphi)}{2}, \tag{22}$$

which attracts

$$C_k + \bar{C}_{-k} = 0, \quad C_k = \frac{B_k - \bar{B}_{-k}}{2} \tag{23}$$

the function $F(\varphi)$ being purely imaginary. The relation corresponding the points (17 and (18) leads after a deduction to:

$$\sum_{-\infty}^{+\infty} C_k \bar{C}_{-k+m} = -\gamma_m, \tag{25}$$

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which shows that if C_K are the complex coefficients of the Fourier series for the function $F(\varphi)$, then $-\gamma_m$ are the complex coefficients of the Fourier series for the function $F^2(\varphi)$:

$$F^2(\varphi) = -\sum_{-2}^{+2} \gamma_m e^{im\varphi} = -(\gamma_0 + 2\gamma_1 \cos\varphi + 2\gamma_2 \cos 2\varphi) \quad (26).$$

For the determination of the constants C_k and then of B_k and finally of A_k, it would be necessary to solve the infinite system of the nonlinear equation (25) or to develop in a Fourier series the imaginary pair function:

$$F(\varphi) = F(-\varphi) = i\sqrt{\gamma_0 + 2\gamma_1 \cos\varphi + 2\gamma_2 \cos 2\varphi}, \quad (27)$$

which attracts: $C_k = C_{-k}$, $C_k + \overline{C}_k = 0$, (28).

The authors develop the $F(\varphi)$ function in a Fourier series, finally obtaining:

$$F(\varphi) = \sum_{n=0}^{\infty} \frac{F^{(n)}(0)}{n!} \left[\sum_{k=0}^{n} C_n^k e^{i(n-2k)\varphi} \right].$$

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Synthesis of a Four Bar Mechanism on the Basis of Harmonic Analysis

Taking this formula for $n - 2k = m$ constant, the coefficient of the Fourier series is being obtained:

$$C_m = \sum_{n=0}^{\infty} \frac{F^{(n)}(0)}{n!} C_n^{\frac{n-m}{2}}, \qquad (36)$$

Since the variation law of the parameter ϕ, ψ, Z_o, Z, function of φ is given, the respective Fourier series has to be determined and compared with the parameter possibly reproduced by the four-sided mechanism, either satisfying in a maximum finite number of points or approximating an effective working portion with a minimum of error.
There are: 1 figure and 9 references, 5 of which are German and 4 Russian.

SUBMITTED: October 28, 1958

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28(1,5) PHASE I BOOK EXPLOITATION GER/2435

Bogdan, R. and Cr. Pelecudi

Ueber die experimentelle Bestimmung der Bewegungen in ebenen Getrieben (Experimental Determination of Motion in Even Drives) [Bucharest, Institutu de mecanica aplicata, 1957] 15 p. Number of copies printed not given. No additional contributers mentioned.

PURPOSE: This booklet may be useful to engineers concerned with gear mechanisms.

COVERAGE: The authors discuss the experimental study of gear parameters conducted at the laboratory of the Institute of Applied Mechanics in Budapest. They describe a mechanical reducer and discuss the experimental set-up. They also present a comparison of theoretical and experimental values and discuss an electrical system for compensating error. No personalities are mentioned. There are 3 references: 1 English, 1 Soviet, and 1 Hungarian. No Table of Contents is given; the book is subdivided as follows:

Card 1/2

PELECUDI, Christian

Electric analogy in the kinematics of plane mechanisms. Rev mec appl 9 no. 3:549-567 '64.

L 24332-66 EWT(d)/EWT(m)/EWP(w)/EWP(v)/T/EWP(j)/EWP(k) IJP(c) WW/EM/RM
ACC NR: AP6024705 SOURCE CODE: UR/0374/66/000/001/0093/0099

AUTHOR: Teters, G. A.; Pelekh, B. L.

ORG: Institute of Polymer Mechanics, AN LatSSR, Riga (Institut mekhaniki polimerov AN LatSSR); L'vov State University im. I. Franko (L'vovskiy gosudarstvennyy universitet)

TITLE: Creep stability of orthotropic shells with regard to deformations caused by shearing

SOURCE: Mekhanika polimerov, no. 1, 1966, 93-99

TOPIC TAGS: orthotropic shell, shell deformation, creep, reinforced shell structure, shear strength, shell buckling, reinforced plastic, fiberglass

ABSTRACT: In fiberglass-reinforced plastic, an orthotropic material whose deformative properties are described by a linear rheologic relationship, creep may be disregarded in the direction of the reinforcement. In studying bending and stability of plates and shells made from this type of material it is necessary to take shear deformation into consideration, since the shear strength of fiberglass-reinforced plastic is low and is reduced still more by creep. When shearing is not accounted for, i.e. when the Kirchhoff model is used, even a qualitative description of the development of buckling with time is impossible in many cases of plate bending since only an elastic solution is obtained in this case. The authors use the refined theory of

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UDC: 678:539.374

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ACC NR: AP6024705

shells for studying the stability of a fiberglass-reinforced cylindrical shell. Momentary and permanent critical forces are determined. It is shown that in some cases the use of the Kirchhoff-Love model (used in this paper only for determining the momentary critical force) results in con siderable qualitative and quantitative errors Orig. art. has: 25 formulas. [JPRS: 35,995]

SUB CODE: 20, 11 / SUBM DATE: 30Jun65 / ORIG REF: 002 / OTH REF: 001

Card 2/2 BLG

PELEKUDI, K. [Pelecudi, Chr.]; PARASKIV, K. [Paraschiv, C.]

Projection method used in the kinematics of mechanisms.
Rev mec appl 9 no. 2:365-392 '64.

PELECUDI, Christ n

Electric analog in the kinematics of plane mechanisms.
Studii cerc mec apl 14 no. 6:1339-1357 '63.

PELECUDI, Chr.; PARASCHIV, C.

Constributions to the projection method used in the kinematics of plane mechanisms. Studii cerc mec apl 14 no. 6: 1387-1414 '63.

PELECUDI, Chr.

"Applied mathematics in statistics" by Gh. Mihoc, V. Urseanu. Reviewed by Chr. Pelecudi. Studii cerc mec apl 14 no. 6:1505-1506 '63.

"Mathematical statistics" by H.M. Ionescu. Reviewed by Chr. Pelecudi. Ibid.: 1506-1507.

24847 S/106/60/000/004/002/007
A055/A133

6.9000

AUTHOR: Pelegov, Yu. F.

TITLE: Some problems concerning the speech communication theory

PERIODICAL: Elektrosvyaz', no. 4, 1960, 7 - 13

TEXT: The author analyses schematically the creation of speech communications on the basis of the information theory and of physiology. The primary source of the communication is the text, the speaker being, as it were, only a "converter". This "converter" compares the sequence of symbols α_i α_j and the totality of standard "phonèmes" β_{ij}. The memory block retains all standard "phonèmes" proper to the given language. The converter can be represented schematically as an analogue of a step-to-step switch. Depending on the next following symbol, one or another "phonème" is received. From the information point of view, the converter can be considered as a four-pole with fixed limits, determined by the vocabulary and morphology of Russian speech. The transition from one state to another is determined by the probability p(i) of the appearance of a given symbol and by the conditional probability P(j) that α_i will be followed by α_j. If the "excess" (excess of speech communications compared to that of the text) ["izby-

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tochnost'" in Russian] at the four-pole input is:

$$R_{inp} = 1 - \frac{H(i)}{\log m}$$

where H(i) is the entropy and m is the number of elements of the grammatical alphabet, the following expression will be true for the output:

$$R_{outp} = 1 - \frac{H(i,j)}{\log M}$$

where M is the number of elements of the "phonème" alphabet. The coding block converts every "phonème" into a series of controlling signals acting through neurons upon the muscular fibres of the articulation apparatus. This is, in fact, a transition to a multichannel communication system, a functional dependence existing between the channels. The "phonème" at the output of the coding block can be represented as a vector whose projections are the controlling signals linked by the probability characteristics. For the automatic recognition of the "phonème", it is often convenient to use a method based on the "ideal receiver" theory. A particular orientation of the vector in n-dimensional functional space corresponds to every standard "phonème". The ideal receiver must give a correct answer every time

when the vector fluctuations are inferior to the half of the distance between the "phonèmes". Some experiments suggest that the recognition of the "phonèmes" by the corresponding sector of the cortex occurs precisely according to the ideal receiver principle. Information contained in the "phonème" is distributed irregularly in the channels. Apparently, some determined groups of neurons exist that transmit the characteristic features or "image" of the "phonème". In order to take account of the action of the vocal cords, the author introduces an additional pulse-generator $x(t)$, whose frequency is determined by that of the fundamental tone, i.e. is a random function of time. Mathematically, the problem is divided into two parts: 1) conversion of the random process with continuous psectrum by a random linear operator (whisper, breath consonants); 2) conversion of the random process with discrete spectrum by a random linear operator (scored speech). The author deals with the first part of the problem. The formation process of the random functional $\xi(\gamma)$ can be represented by the expression $\xi(\gamma t) = L_{\gamma t}\, \xi(t)$ ($L_{\gamma t}$ being the random operator), or, in a developed form, by:

$$\xi(\gamma t) = \int_0^t \xi(t) y(t, \gamma) dt$$

where $y(t,\gamma)$ is the conversion kernel, and γ is the orientation of the vector of

the controlling signals. After determining the correlation function at the four-pole output, the author finds the following expression for the initial moment of second order:

$$\Gamma_{\varepsilon}(\gamma\gamma' tt') = m_y(t\gamma)m_y(t'\gamma') + B_y(tt'\gamma\gamma') \qquad (1)$$

where $m_y(t\gamma) = M[y(t,\gamma)]$. [Abstracter's note: the author does not state the meaning of t', γ' and t.] The "phonème" is considered as stationary if, within its duration τ_{ph}, the orientation of the controlling signals vector remains constant. This concept of stationary state covers all sounds, except b, g, d, p, t, k. $B_y(tt'\gamma\gamma')$ characterizes then the statistical "couplings" ("svyazi") between "phonèmes" (argument $\gamma\gamma'$) and the statistical "couplings" of the controlling signals vector for non-stationary "phonèmes". Supposing that $t' = t + \tau$, $0 \leq \tau \leq \tau_{ph}$, the author finds the following expression for the instantaneous correlation function over the duration of the stationary "phonème":

$$B_{\varepsilon}^{(\gamma)}(t) = \frac{1}{\tau_{ph}} \int_0^{\tau_{ph}} y^{\gamma}(t)y^{\gamma}(t+\tau)dt + \frac{D}{\tau_{ph}}$$

where D is a constant. Expression $b_y^{(\gamma)}(\tau) = \frac{1}{\tau_{ph}} \int_0 y(t)y(t+\tau)dt$

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characterizes the statistical "couplings" introduced by the linear circuit..
Since

$$b_y(\tau_{ph}) \equiv 0,\ b_y(\tau) = \frac{1}{\tau_{ph}} \int_0^{\infty} y(t)y(t+\tau)dt \text{ or } b_y(iw) = \frac{1}{\tau_{ph}}\, y(iw)y^*(iw).$$

[Abstracter's note: it is not explained what the asterisk means.] But:

$$b_y(iw) = \int_0^{\infty} b_y(\tau)e^{-iw\tau}dt$$

determines the energy spectrum at the linear circuit output:

$$B_{\xi}^{(\gamma)}(w) = b^{(\gamma)}(w) + D = W_{\xi}(w) - D = W'_{\xi}(w).$$

$|Y(iw)|^2$ being the amplitude-frequency characteristic of the circuit, the author finally arrives at the following formula:

$$W'_{\xi}(w) = |Y(iw)|^2 = k\left|\frac{(iw-P_{10})\ldots(iw-P_{k0})}{(iw-P_{1n})\ldots(iw-P_{mn})}\right|^2 .$$

[Abstracter's note: no explanation is given of the meaning of P, k, n]. In the case of non-stationary sound, the analysis is more complicated, because $y^{\delta}(t) \neq$ const. Equation (1) takes here the following form:

PELEGOV, Yu. F., Cand Tech Sci, "Investigation of Integral Methods of Receiving Radiotelephone Signals." Leningrad, 1961. (Min of Higher and Sec Spec Ed RSFSR. Leningrad Electrotechnical Engineering Inst in V. I. Ul'yanov-Lenin). (KL, 2-61, 211).

PELEGOV, Yu.F.

Questions on the theory of speech communications. Elektrosviaz' 14 no.4:7-13 Ap '60. (MIRA 13:6)
(Information theory)

S/123/61/000/012/028/042
A004/A101

9,7000

AUTHOR: Pelegren, M. Zh.

TITLE: Remarks on the connection of analog and digital computers

PERIODICAL: Referativnyy zhurnal, Mashinostroyeniye, no. 12, 1961, 14, abstract 12D99 ([Mezhdunar. federatsiya po avtomat. upr. 1-y Mezhdunar. kongress po avtomat. upr.] Moscow, AN SSSR, 1960, 22 pages, illustr.)

TEXT: The author presents the fundamental tenets of the theory of random functions and analyzes the processes of coding continuous functions containing noise into discrete form. It is pointed out that the investigation of additional data on information and noise, e.g. their spectra, makes it possible to reduce the RMS error using Schmidt triggers. There are 8 figures and 3 references.

I. Alimov

[Abstracter's note: Complete translation]

Card 1/1

PELEGRINI, S.

A contribution to the knowledge of the length of the period of service of Gacko cattle. p. 462

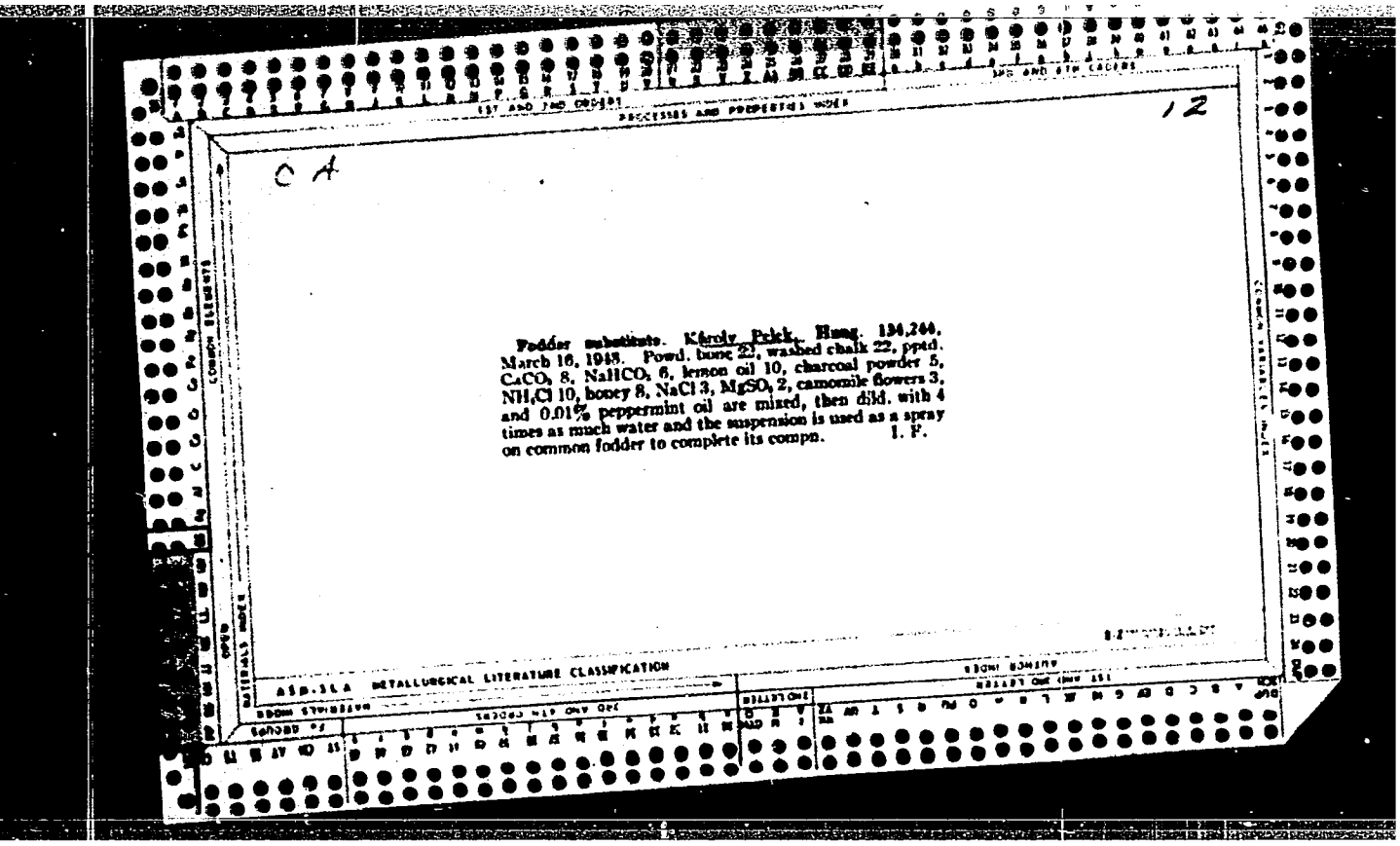
POLJOPRIVREDNI PREGLED. (Drustvo poljoprivrednih inzenjera i tehnicara Bosna i Hercegovine) Sarajevo, Yugoslavia. Vol. 7, no. 11/12, Nov./Dec. 1958

Monthly List of East European Accession (EEAI) LC, Vol. 8, no. 6
June 1959
Uncl.

PELEGRINI,S.

Pelegrini, S. Economic value of cattle based on the livestock census. p.52.

SO: Monthly List of East European Accessions List (EEAL) LC, Vol 4, No. 11 November 1955, Uncl.



12

C A

Fodder substitute. Károly Polák, Hung. 134,244. March 16, 1948. Powd. bone 22, washed chalk 22, ppted. $CaCO_3$ 8, $NaHCO_3$ 6, lemon oil 10, charcoal powder 5, NH_4Cl 10, honey 8, NaCl 3, $MgSO_4$ 2, camomile flowers 3, and 0.01% peppermint oil are mixed, then dild. with 4 times as much water and the suspension is used as a spray on common fodder to complete its compn. I. F.

ASD-SLA METALLURGICAL LITERATURE CLASSIFICATION

PSLEKH, B.L. (L'vov)

Determining concentration coefficients of the bending of plates with holes. Prikl.mekh. 1 no.7:139-143 '65.

(MIRA 18:8)

1. Lvov'skiy gosudarstvennyy universitet.

SHEREMET'YEV, M.P. (L'vov); PELEKH, B.L. (L'vov)

Establishment of a precise theory of plates. Inzh.zhur. 4 no.3:504-509 '64. (MIRA 17:12)

L 16682-65 EWT(d)/EWT(m)/EWP(w)/EWA(d)/EWP(v)/EWP(k)/EWA(h) Pf-4 Feb AEDC(a)
ACCESSION NR: AR4045235 EM S/0124/64/000/007/V008/V008

SOURCE: Ref. zh. Mekhanika, Abs. 7V56

AUTHOR: Sheremet'yev, M. P.; Pelekh, B. L.

TITLE: The problem of variational principles in the theory of shells

CITED SOURCE: Sb. Teor. i pry*kl. matem. Vy*p. 2. L'viv, L'vivs'k. un-t, 1963, 68-86

TOPIC TAGS: shell, shell theory, Lagrange principle, Castigliano principle, basic functional

TRANSLATION: Equations expressing the Lagrange and Castigliano variational principles in the theory of shells are presented. The Castigliano principle is derived from the so-called basic functional. By means of the latter, other variational principles (including the principle of possible shifts) are obtained in the form of particular cases. All the differential equations and boundary conditions of the theory of shells are regarded as Euler equations, written for the basic functional. All operations correspond to a case in which the Kirchkoff - Lyav hypothesis regarding the retention of the normal element is not completely fulfilled. Non-orthogonality of the fibers with respect to the midsurface after

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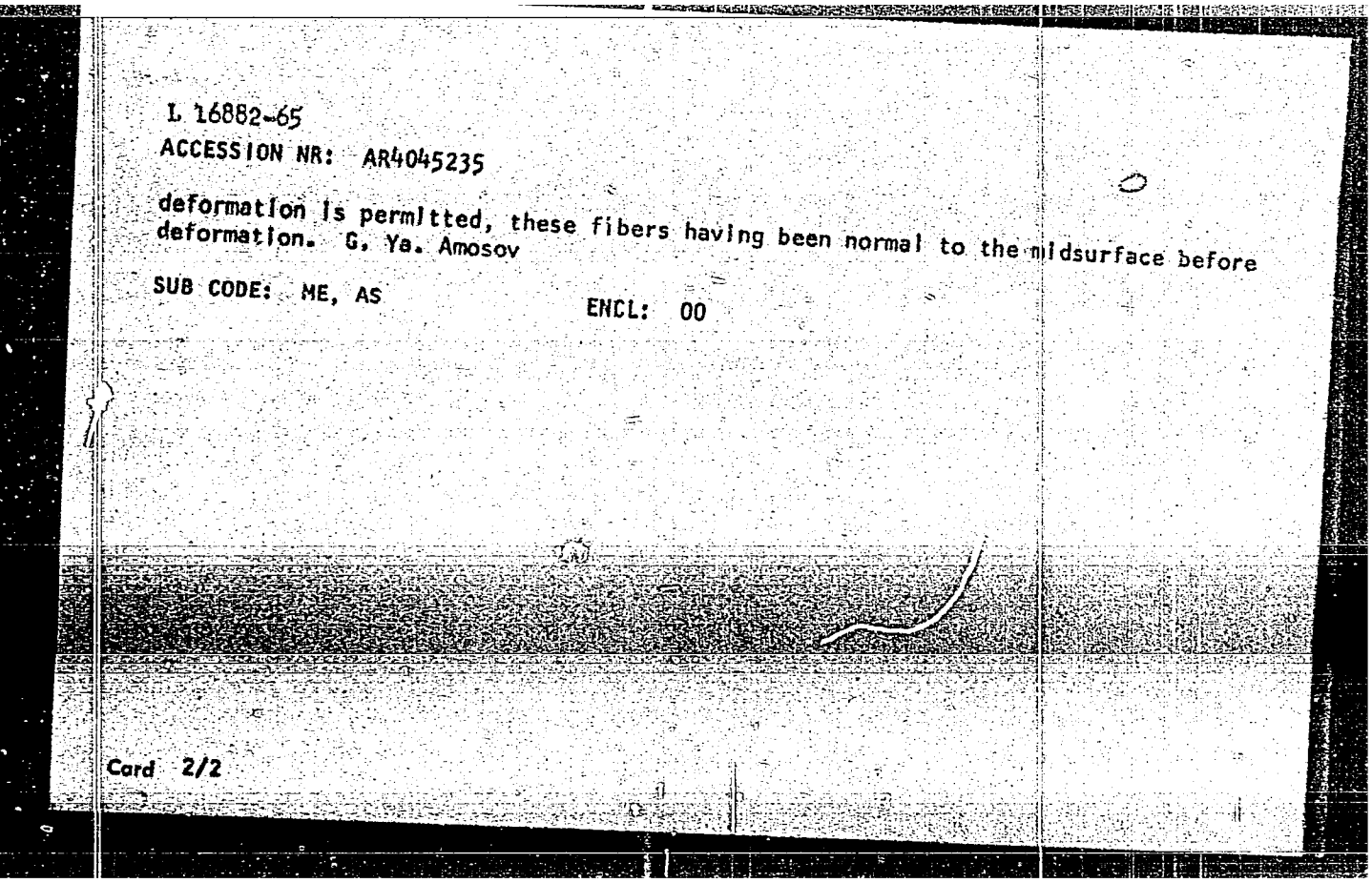

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ACCESSION NR: AR4045235

deformation is permitted, these fibers having been normal to the midsurface before deformation. G. Ya. Amosov

SUB CODE: ME, AS ENCL: 00

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ACCESSION NR: AP4043523 S/0258/64/004/003/0504/0509

AUTHORS: Sheremet'yev, M. P. (L'vov); Pelekh, B. L. (L'vov)

TITLE: On the construction of refined plate theory

SOURCE: Inzhenerny*y zhurnal, v. 4, no. 3, 1964, 504-509

TOPIC TAGS: plate theory, boundary condition, normal stress, displacement field, stress tensor, deformation energy, rotation angle, symmetric deformation, circular plate, concentrated load, cantilever beam

ABSTRACT: A general theory of plates is derived which allows four boundary conditions to be satisfied on the plane surface $z = \pm h$. These conditions are general and can be static, geometric, or displacement type conditions. The only assumptions made are: 1) the deformation component $e_{zz} = 0$; and 2) the normal stress σ_{zz} is small compared to other stresses. The plate surface is divided into an x,y coordinate grid and the displacement field represented by

$$u = u^{(0)} + z\gamma_x^{(0)} + z^3 (u^{(T)} + z\gamma_x^{(T)}), \quad v = v^{(0)} + z\gamma_{0x}^{(0)} + z^3 (v^{(T)} + z\gamma_0^{(T)}).$$

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This equation is subsequently discussed in four specific problems: 1) fixed circular plate under uniformly distributed load; 2) fixed plate with concentrated load at the center; 3) hinged beam with uniform load; and 4) deflection of a cantilever beam with a concentrated load at its end. Orig. art. has: 29 equations.

ASSOCIATION: none

SUBMITTED: 12Jul63

SUB CODE: ME ENCL: 00

NO REF SOV: 006 OTHER: 000

Card 3/3

PELEKH, L.Ye.

Oxidation-reduction properties of the cerebrospinal fluid in brain tumors of varying histostructure. Probl.neirokhir. 4:247-252 '59. (MIRA 13:11)

(BRAIN--TUMORS)
(CEREBROSPINAL FLUID)
(OXIDATION, PHYSIOLOGICAL)

PELEKH, P.M.

"Formation of the personality" by Philipp Lersch [in German]. Reviewed by P.M.Pelekh [in Ukrainian]. Nauk.zap.Nauk.-dosl. inst.psykhol. 10:233-237 '59. (MIRA 13:5)
(Personality) (Lersch, Philipp)

SEMENOV, P., podpolkovnik; PELEKH, S., podpolkovnik.

Some aspects of the training of tank crews. Tankist no.4:24-26 Ap '58.
(Tank warfare) (MIRA 11:5)

PELEKH, L. Ye., Cand of Med Sci "Concentration of Hydrogen Ions (pH) of the Spinal Fluid During Swelling of the Myelencephalon," L'vov, 1959, 18 pp (L'v ov State Medical Institute) (KL, 7-60, 110)

PELEKH, M., gornyak

Reading through "Sovetskii shakter." Sov.shakht. 12 no.12:38 D '63. (MIRA 17:3)

1. Shakhta imeni Eduarda Urksa, Chekhoslovakiya.

Pelekh, T.

The problem of absorption of a difficultly soluble gas by drops of liquid. M. Al'tshuler and T. Pelekh. *Sbornik Rabot Nauch. Stud. Obshchestva L'vov. Politekh. Inst.* 1955, No. 25, 104-111; *Referat. Zhur., Khim.* 1955, Abstr. No. 15027.—The influence of "Shablin's effect" on the process of absorption of CO_2 by a drop of water was investigated. By this effect is understood an increase in absorption taking place at the expense of spattering of the drop at the moment of hitting an obstacle. It is assumed that this effect consists in an absorption effect occurring when the drop strikes the medium of the gas, and of an impact-effect (IB) (impact absorption). The value of IB for the drop is proportional to the increase in the surface and, under otherwise stable conditions, is significantly higher than that for a freely falling drop. A substantial difference is found between IB of a drop that hits the bottom of the absorber and the IB of a drop that hits a wall of the app. The 1st case is comparable to a process taking place in a bubbler, the 2nd to an inlet effect. The value for IB on the wall of the app. is higher than that on the bottom. The exptl. procedure is described. J. Mloszewska

PELEKHATIY, K.

USSR, Ivov Provience, SSR
Chairman, Lvov Soviet Executive Committee, and Deputy to USSR Supreme Soviet
"Collective Farms to Lvov Provience Izvestia, 1950

SOURCE: Current Digest of the Soviet Press, Vol 2, No. 22, 1950, page 48, (In CIA Library)

PELEKHATYY, M.I.

Prevention of "phase ambiguity" in a multiplex phase telegraphy system. Elektrosviaz' 17 no.8:23-31 Ag '63. (MIRA 16:8)
(Telegraph)

S/106/63/000/004/005/008
A055/A126

AUTHORS: Sokolov, V.V., Pelekhatyy, M.I.

TITLE: On transient processes in resonant systems with phase keying

PERIODICAL: Elektrosvyaz', no. 4, 1963, 33 - 38

TEXT: Formulae are derived for the transient amplitude and phase at the output of an n-stage resonant amplifier in the general case, i.e., in the case of arbitrary phase jumps and in the presence of a detuning of the resonant system with respect to the incoming signal. The authors examine an n-stage amplifier with single-tuned anode circuits and with the amplification factor

$$\dot{K}_n = \frac{K_0^n}{(1 + i\frac{a}{d})^n} = K^n e^{-in\varphi}, \qquad (1)$$

where $K = \frac{K_0 d}{\sqrt{\varepsilon^2 + d^2}}$ is the amplitude characteristic of a single-stage amplifier, $\varphi = \operatorname{arctg}\frac{\varepsilon}{d}$ is the phase characteristic, $\varepsilon = \frac{2\Omega}{\omega}$ is the relative detuning

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and d is the attenuation of the circuit. The resultant signal at the amplifier output (when the input signal phase jump is $\Delta\theta = \theta_2 - \theta_1$) is considered as the sum of the residual oscillations (after the switching out of the input voltage with phase θ_1) and the rising oscillations (after the switching in of an input voltage with the same amplitude and frequency, but with phase θ_2). Omitting the initial phase $n\varphi$ and assuming that the detuning is positive, the amplitude of the resultant oscillations is

$$C_n(t) = \frac{u_{m0}\omega d_0}{\left(\sqrt{s^2+d^2}\right)^n} \times$$

$$\times \sqrt{1 - 4D_n(t)\,e^{-st}\sin\frac{\Delta\theta}{2}\sin\left[\Omega t - \psi_n(t) + \frac{\Delta\theta}{2}\right] + 4D_n^2(t)\,e^{-2st}\sin^2\frac{\Delta\theta}{2}}, \quad (3)$$

and the phase of the resultant oscillations is

$$\theta_n(t) = \operatorname{arc\,tg}\frac{\sin\theta_2 - 2D_n(t)\,e^{-st}\sin\frac{\Delta\theta}{2}\cos\left[\Omega t - \psi_n(t) - \frac{\theta_1+\theta_2}{2}\right]}{\cos\theta_2 - 2D_n(t)\,e^{-st}\sin\frac{\Delta\theta}{2}\sin\left[\Omega t - \psi_n(t) - \frac{\theta_1+\theta_2}{2}\right]}, \quad (4)$$

On transient processes in resonant systems ....

where $D_n(t)$ and $\psi_n(t)$ are coefficients determined in an earlier work (Sokolov, Elektrosvyaz', no. 11, 1961) and depending on the number of stages, on the quality of the circuits and on the detuning:

$$D_n(t) = \sqrt{\left[1 + \sum_{m=0}^{\infty} \frac{(-1)^m x^{2m}}{(2m)!} \sum_{n=1}^{n-1} \frac{(\sigma' t)^n}{n!} x^{2n}\right]^2 + \rightarrow}$$

$$\rightarrow \sqrt{\rightarrow + \left[\sum_{m=0}^{\infty} \frac{x^{2m+1}}{(2m+1)!} \sum_{n=1}^{n-1} \frac{(\sigma' t)^n}{n!} x^{2n+1}\right]^2},$$

$$\psi_n(t) = \frac{\sum_{m=0}^{\infty} \frac{x^{2m+1}}{(2m+1)!} \sum_{n=1}^{n-1} \frac{(\sigma' t)^n}{n!} x^{2n+1}}{1 + \sum_{m=0}^{\infty} \frac{(-1)^m x^{2m}}{(2m)!} \sum_{n=1}^{n-1} \frac{(\sigma' t)^n}{n!} x^{2n}},$$

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On transient processes in resonant systems ....

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A055/A126

where

$$\alpha' = \sqrt{1 + \frac{\delta^2}{d^2}} .$$

Discussing the formulae (2) and (3), the authors examine the variation of the amplitude and phase of the signal in transient condition and investigate the peculiarities of transient processes in some particular cases. There are 5 figures.

SUBMITTED: June 13, 1962

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ACCESSION NR: AP4043715 S/0106/64/000/008/0017/0020

AUTHOR: Pelekhaty*y, M. I.

TITLE: Comparison of noise immunities of some types of signal reception in phase telegraphy

SOURCE: Elektrosvyaz', no. 8, 1964, 17-20

TOPIC TAGS: radio telegraphy, phase telegraphy, phase comparison telegraphy, polarity comparison telegraphy

ABSTRACT: The noise immunity inherent to the polarity-comparison coherent method and the phase-comparison method, with the signal-envelope distributed according to the Rayleigh law, is theoretically investigated. With a low fading rate, both methods are found to be practically equivalent for any practical elementary-signal length. For communication systems requiring a very small error probability, having a high signal-to-noise ratio and n close to 1 (where

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SSD Pp-4/Pn-4

ACCESSION NR: AP3005602 S/0106/63/000/008/0023/0031

AUTHOR: Pelekhaty*y, M. I.

TITLE: Eliminating "indefinite phase" in a double-phase-shift telegraph receiver

SOURCE: Elektrosvyaz', no. 8, 1963, 23-31

TOPIC TAGS: phase-shift telegraphy, phase-shift keying, telegraph receiver, telegraphy

ABSTRACT: A new method is theoretically considered of eliminating the fourth-order indefinite phase of coherent voltage in a synchronous receiver in a two-phase-shift telegraph system without additional pilot signals. The principles of the double-phase-shift keying are set forth as they constitute the basis of the new method. Algebra of logic is used in developing receiver circuits. It is proven that the coefficient of rise of error number, as in the case of the single-phase-

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shift telegraphy, is between 1 and 2. An error-number probability vs. signal-to-noise ratio curve is plotted. "In conclusion, it is my pleasant duty to thank V. V. Sokolov for his help and advice in the course of the work." Orig. art. has: 9 figures, 16 formulas, and 1 table.

ASSOCIATION: none

SUBMITTED: 30Aug62 DATE ACQ: 06Sep63 ENCL: 00

SUB CODE: CO NO REF SOV: 005 OTHER: 001

Card 2/2

L 55224-65 EWT(d)/EEC(t)/EEC-4/FSS-2 Pn-4/Pp-4/Pae-4

ACCESSION NR: AP5009815 UR/0106/65/000/003/0023/0031
621.396.235:621.391.17

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B

AUTHOR: Sokolov, V. V.; Pelekhatyy, M. I.

TITLE: Effect of noise correlation on the noise immunity of coherent reception in PM telegraphy

SOURCE: Elektrosvyaz', no. 3, 1965, 23-31

TOPIC TAGS: noise immunity, PM telegraphy, radio telegraphy, coherent reception

ABSTRACT: The possibility is theoretically considered of increasing the noise immunity of coherent reception, in phase-modulation telegraphy, by increasing the correlation of noise at the synchronous-detector inputs; this is achieved by equalization of the transmission factors of the received and reference signals; the correlation factor tends to approach 1 in this case. Formulas are derived which characterize the noise immunity of the coherent method under various conditions;

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the noise immunity inherent to the phase-comparison method is also considered. The effect of circuit parameters on the noise-correlation factor is explored. These findings are reported: (1) It is possible in principle to obtain a higher noise immunity, with time-varying channel parameters, by increasing the noise correlation between the received and reference signals in the synchronous detector; (2) The noise correlation factor can be augmented by widening the reference passband up to a value equal to the signal band with a corresponding equalization of the phase characteristics of both circuits. Orig. art. has: 6 figures and 23 formulas.

ASSOCIATION: none

SUBMITTED: 13May64 ENCL: 00 SUB CODE: EC

NO REF SOV: 005 OTHER: 001

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PELEKHATYY, M.I.

Comparison of the interference rejection of some phase telegraphy signal reception techniques. Elektrosviaz' 18 no.8:17-20 Ag '64. (MIRA 17:8)

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